Serology, and Infection. Immunology is not considered in the text. A total of ninety-two experiments are covered and thirty-three of these are devoted to the physiology of bacteria where the major emphasis belongs. The directions are clear, concise, and free from extraneous material, all of which tends to develop sound technique.

The section on serology is especially well executed for beginners. The four experiments listed deal with the preparation of an antigen, the production of antibodies, electrolytes and agglutination. *Proteus vulgaris* is the organism used in the experiments and the rabbit is used to stimulate agglutinin production.

The experiments used in the section of applied bacteriology covers various phases of water, milk and its pasteurization, food spoilage, acetic acid, soil counts, and bacteria in root nodules. Each section of the book lists a series of questions pertaining to that particular topic, which require thought and analysis. The appendix tabulates miscellaneous information keeping the text free of irrelevant information.

Wm. J. Bonisteel

Fordham University.

FIELD TRIPS OF THE CLUB

Trips of May 24–25 (1941) to the Watchung Mountains

Sixty-six members and guests were present on these two trips, the first to Washington Valley, near Watchung, and the second to Seeley's Notch, near Scotch Plains, N. J.

In previous notes in Torreya on the flora of this area[1] 603 species, varieties, and forms have been recorded by their scientific names, in addition to many others listed less formally by only their common names. To conserve space and avoid needless repetition in the following reports species previously listed by their scientific names will be referred to only by their common names, while species or varieties not previously listed formally will be referred to once by their scientific names and thereafter only by their common

[1] Torreya **31**: 29–36 (1931), **36**: 57–61 and 88–93 (1936), **38**: 10–11, 103–105 and 157–158 (1938), **39**: 143–145 (1939), **40**: 24–25 and 177–179 (1940), and **41**: 23–25 (1941).

names.[2] To date 1,737 different species, varieties, and forms of wild plants and 533 of cultivated plants have been found in the area within 10 miles of the town hall of Watchung.

Among the 444 different kinds of wild plants identified on these two trips were many not before recorded on these pages. In Seeley's Notch we found the northern hedge-hyssop (*Gratiola neglecta*), glaucous honeysuckle (*Lonicera dioica*) clearweed (*Pilea pumila*), common wild-indigo (*Baptisia tinctoria*), hairy bedstraw (*Galium pilosum*), common wild-liquorice (*G. circaezans*), American hedge bindweed (*Convolvulus americanus*), reed canary-grass (*Phalaris arundinacea*), and Virginia bugleweed (*Lycopus virginicus*). Six kinds of *Rubus* were studied and compared with each other, *R. alleghaniensis, R. frondosus, R. hispidus, R. occidentalis, R. phoenicolasius,* and *R. procumbens.* The showy purple-flowering raspberry and three hickories, *Carya cordiformis, C. glabra,* and *C. ovata,* were found also in the Notch. On a dump at Fanwood several plants of the large white ground-cherry (*Leucophysalis grandiflora*) turned out to be the most important find of the day. I know of no other record of this species from the Middle Atlantic States. Three species of locust were in full bloom and provided a splendid show—the clammy locust, black locust (*Robinia pseudo-acacia*), and bristly locust (*R. hispida*). The hollyhock (*Althaea rosea*) was discovered as an escape.

On the Second Watchung Mountain we found the leaves of northern wild-comfrey (*Cynoglossum boreale*), numerous specimens of pitch pine (*Pinus rigida*), butternut (*Juglans cinerea*), black walnut (*J. nigra*), common speedwell (*Veronica officinalis*), and thymeleaf speedwell (*V. serpyllifolia*). Six kinds of *Viburnum* were studied—the mapleleaf arrow-wood, snowball-tree, downyleaf arrow-wood, American cranberry-tree, common arrow-wood (*V. dentatum*), and black-haw (*V. prunifolium*), all in flower. In Wetumpka Notch we found the meadow garlic (*Allium canadense*) growing almost alongside of the common wild garlic seen on every previous trip. The American trembling aspen (*Populus tremu-*

[2] Nomenclature, both scientific and common, for the wild flora is in accordance with that used in "A list of the observed flora of Watchung, N. J., and its immediate vicinity," distributed by the Union County Park Commission, Warinanco Park, Elizabeth, N. J. (1940) and, for the cultivated flora, in accordance with that used in "Cultivated Plants," by H. N. Moldenke (1938)

loides) and large-toothed aspen (*P. grandidentata*), growing in close proximity, were in good condition for comparison. In Washington Valley were seen the common Indian-bean, Pursh's figwort (*Scrophularia lanceolata*), balsam ragwort (*Senecio balsamitae*), and four plantains, *Plantago lanceolata, P. rugelii, P. major* var. *vulgaris,* and *P. major* var. *sinuata.* Both the wild yellow plum and the Canada plum (*Prunus nigra*) were much in evidence. The plantain blueweed (*Echium plantagineum*) proved to be a novelty for most of the party, while a young honey-locust (*Gleditsia triacanthos*) became the first known record for this species from the area.

Cryptogams noted included the birch polypore (*Polyporus betulinus*), bog moss (*Sphagnum squarrosum*), campfire-moss (*Funaria hygrometrica*), common haircap-moss (*Polytrichum commune*), rattlesnake-fern, ebony spleenwort, American lady-fern (*Athyrium angustum*), brittle-fern, hay-scented fern (*Dennstaedtia punctilobula*), sensitive-fern, long beech-fern (*Phegopteris polypodioides*), American polypody, Christmas fern, American bracken, blunt-lobed woodsia-fern, cinnamon-fern, interrupted-fern, and field horsetail (*Equisetum arvense*).

H. N. Moldenke

Trips of September 6–7 through Seeley's and Wetumpka Notches

Twenty-six members and guests were present on these trips to the Watchung Mountains in northern New Jersey. Since the last report in Torreya [Trips of May 24 and 25, 1941] twenty-one additional kinds of wild plants have been found in the area, bringing the total to 1,758.

On the two trips here being reported on, 538 different kinds of plants were identified, an all-time high for trips to this region. Thanks to the help of Mr. Nearing 48 species of cryptogams were identified, of which the following have not yet been reported on these pages: *Mutinus caninus, Flammula magna, Hypomyces lactifluorum, Agaricus silvicola, Venenarius crenulatus, Stereum gausapatum, Russula varians, Hydrocybe conica, Russula delica, Pluteus cerbinus, Hydnum repandum, Prunulus galericulatus, Clavaria flava,* and *Russula purpurina,* among the fungi, and *Diphyscium sessile, Ditrichum pallidum,* and *Pogonatum brevicaule,* among the mosses.

In or near Seeley's Notch we found the extremely rare cream-colored spotted jewel-weed (*Impatiens biflora* f. *albiflora*) among a patch of the normal form, the recently introduced Asiatic bristly ladysthumb (*Persicaria longiseta*), the common water-pepper (*Persicaria hydropiper*) and American germander (*Teucrium canadense*), common beggar-ticks (*Bidens frondosa*) and purple-stemmed swamp beggar-ticks (*B. connata*), white sweet-clover (*Melilotus alba*), and northern star-grass (*Hypoxis hirsuta*). On a dump at Fanwood was found in full fruit the Chinese lantern-plant (*Physalis alkekengi*) and in the woods near the spot where the whorled pogonia and moccasin-flower grow in such abundance was the purple chokeberry (*Aronia prunifolia*). In Wetumpka Notch we saw the smooth ground-cherry (*Physalis subglabrata*) and Virginia wild-rye (*Elymus virginicus*), while in the fields and along the roadsides in Washington Valley were thousands of specimens of sheep's fescue (*Festuca ovina*), Pennsylvania ladysthumb (*Persicaria pensylvanica*), common evening-primrose (*Oenothera biennis*), black medic (*Medicago lupulina*), cow vetch (*Vicia cracca*), and the never-before-discovered Virginia beardgrass (*Andropogon virginicus*). The purple-head sneezeweed (*Helenium nudiflorum*) filled one meadow in great profusion, growing along with common boneset, common trumpetweed, New York ironweed, arrowleaf tear-thumb, hairy milkweed, and clustered beak-rush. In the woods members of the party observed the large-bracted tick-trefoil (*Desmodium bracteosum*), few-flowered agrimony (*Agrimonia parviflora*), woodland agrimony (*A. rostellata*), shin-leaf (*Pyrola elliptica*), beach-drops (*Epifagus virginiana*), hairy hawkweed (*Hieracium gronovii*), and white rattlesnake-root (*Nabalus albus*). Both the large-flowered and the small-flowered sensitive-peas were seen (*Chamaecrista fasciculata* and *C. procumbens*) and, in the open sunny fields, vast beds of white heath aster (*Aster ramosissimus*). Other interesting plants included the tall thimbleweed (*Anemone virginiana*), creeping yellow water-cress (*Radicula sylvestris*), two species of purple gerardia, two species of false-foxglove, the dense gayfeather, and the fringed gentian. Of interest also was the examition of many specimens of garden mock-orange (*Philadelphus coronarius*), scentless mock-orange (*P. inodorus*), and common ninebark (*Physocarpus opulifolius*) which have persisted for 20 or more years without cultivation in a dense tangle of native vegetation.

H. N. Moldenke

Trip of September 13–14, 1941

Perfect weather and congenial companions made the week-end outing of September 13 and 14 in the Catskills a delightful experience for those who went to Shandaken under the leadership of Mr. Frederick R. Lewis. With him six people interested in botany and mycology made the trip: Mr. William Pfeifer, Dr. Bernard Friedman, Mrs. Werner Hartman, Mr. Stephen Walker, Miss Myrtle Waterfall, and Miss Marion White. A large "housekeeping" cabin, part of Lyons' Mountain Spring Camp, provided a fine view of river and mountains, sleeping quarters, warmth, and cooking facilities. Speaking of cooking—if anyone in the Torrey Club can excel Mr. Lewis as a buyer, dietitian, and chef, he is yet to be found. Such meals as he planned more than satisfied the voracious appetites of the hikers who, on Saturday afternoon, explored the region in the vicinity of Fox Hollow below Panther Mountain and, on Sunday, the Woodland Valley up to the junction of Giant Slide and Panther Mountain trail.

The trip was, in every way, a success. At least sixty-five different species of fungi were collected and identified, to say nothing of toads, mosses, and clinging burrs. The glorious views, pure mountain air, and the interest shown by the seven members made the trip memorable. May an opportunity for such an excursion come again next year!

Marion L. White

Trip of September 28 (1941) to Highland Mills, N. Y.

On September 28 a party of seven visited the railroad cut at Highland Mills, N. Y., and found an abundance of Lower Devonian fossils. Good specimens of *Spirifer aroostookensis Leptocoelia flabellites, Rensellaeria ovalis* and *Grammysia arcuata* were obtained by all. An exceptionally fine complete specimen of the trilobite *Phacops cristata* was uncovered. Following the collection of these fossils the party crossed to the east side of Pine Hill where exposures of Silurian quartzite conglomerate were seen and then up the mountain of granite gneiss to the east. Here luncheon was punctuated by falling acorns.

In the afternoon the party traveled west of the Devonian range to the Ordovician slates of the Hudson River Group. These they followed to Warwick, N. Y., through a countryside splashed with

autumn colors. From the top of Bellvale Mountain the broad expanse of the Ordovician terrane stretched to the northwest where mist hid its termination at the Shawangunk Mountain Range. Descending the east side of the mountain toward Greenwood Lake, a stop at vertical-standing Upper Devonian shales enabled the party to collect some plant impressions of some of the earliest land plants. In the mountains east of Greenwood Lake pre-Cambrian granite-gneiss was seen, likewise some beaver ponds. At one of these, sweet wild grapes growing by the roadside furnished the last of the unexpected pleasures of the day.

CECIL H. KINDLE

PROCEEDINGS OF THE CLUB

MINUTES OF THE MEETING ON MAY 21, 1941

The meeting was called to order by the President, Dr. J. S. Karling, at the Boyce Thompson Institute for Plant Research at 3:40 P.M., following the serving of excellent refreshments by the staff of the Institute. Forty-five members and guests were present.

The minutes of the previous meeting were adopted as read.

It was voted that the following be admitted by unanimous ballot to annual membership: Miss Ruth R. Richards, Milwaukee-Downer College, Milwaukee, Wis.; Mr. Burritt K. Lupton, Franklin Ave., Wyckoff, N. J.; Mr. Robert S. Platt, Jr., 10820 Drew St., Chicago, Ill.; Dr. William Henry Eyster, 130 S. 13th St., Lewisburg, Pa.; Mr. John H. Schaefer, 5305 44th St., Laurel Hill, L. I., N. Y.; Mr. Morris Deitchman, 404 Central Tower, Youngstown, Ohio; and Dr. Arthur W. Proetz, 12 Westmoreland Pl., St. Louis, Mo.; to associate membership: Mr. Jose Perez Carabia, New York Botanical Garden, New York, N. Y.; Mr. Severin Rapp, Box 417, Sanford, Fla.; Mr. Harold Epstein, 5 Forest Ct., Larchmont, N. Y.; and Mr. Stephen Walker, 15 Lincoln Park, Newark, N. J. The transfer of Miss Sara J. Stewart, 64 Linwood Rd., New Rochelle, N. Y., from annual to associate membership was approved. The resignations of Mr. John Masek, Apopka, Fla., from annual membership and Miss Amy E. Davis, 230 E. 71st St., New York, N. Y., from associate membership were accepted with regret.